

Claims

1. An isolated nucleic acid molecule comprising
(a) nucleic acid molecules which hybridize under stringent conditions to a
molecule consisting of a nucleic acid of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, or SEQ
5 ID NO:50 and which code for a polypeptide having RIP60 activity,
(b) deletions, additions and substitutions of (a) which code for a polypeptide
having RIP60 activity,
(c) nucleic acid molecules that differ from the nucleic acid molecules of (a) or
(b) in codon sequence due to the degeneracy of the genetic code, and
10 (d) complements of (a), (b) or (c).

2. The isolated nucleic acid molecule of claim 1, wherein the isolated nucleic acid
molecule comprises SEQ ID NO:1.)

15 3. The isolated nucleic acid molecule of claim 1, wherein the isolated nucleic acid
molecule comprises SEQ ID NO:3, SEQ ID NO:5 or SEQ ID NO:50.

4. The isolated nucleic acid molecule of claim 1, wherein the isolated nucleic acid
molecule codes for a polypeptide comprising SEQ ID NO:2.)

20 5. The isolated nucleic acid molecule of claim 1, wherein the isolated nucleic acid
molecule codes for a polypeptide comprising SEQ ID NO:4, SEQ ID NO:6 or SEQ ID
NO:51.

25 6. An isolated nucleic acid molecule selected from the group consisting of
(a) a unique fragment of nucleic acid molecule of SEQ ID NO:1,
(b) complements of (a),
provided that the unique fragment includes a sequence of contiguous
nucleotides which is not identical to any sequence selected from the sequence group
30 consisting of
(1) sequences having the database accession numbers of Table 1, ←
(2) complements of (1), and
(3) fragments of (1) and (2).

7. The isolated nucleic acid molecule of claim 6, wherein the sequence of contiguous nucleotides is selected from the group consisting of:

- (1) at least two contiguous nucleotides nonidentical to the sequence group,
- (2) at least three contiguous nucleotides nonidentical to the sequence group,
- 5 (3) at least four contiguous nucleotides nonidentical to the sequence group,
- (4) at least five contiguous nucleotides nonidentical to the sequence group,
- (5) at least six contiguous nucleotides nonidentical to the sequence group,
- (6) at least seven contiguous nucleotides nonidentical to the sequence group.

8. The isolated nucleic acid molecule of claim 6 or 7, wherein the fragment has a size selected from the group consisting of at least: 8 nucleotides, 10 nucleotides, 12 nucleotides, 14 nucleotides, 16 nucleotides, 18 nucleotides, 20 nucleotides, 22 nucleotides, 24 nucleotides, 26 nucleotides, 28 nucleotides, 30 nucleotides, 50 nucleotides, 75 nucleotides, 100 nucleotides, and 200 nucleotides.

15 9. The isolated nucleic acid molecule of claim 6 or 7, wherein the unique fragment encodes a peptide which is a fragment of a polypeptide consisting of SEQ ID NO:2.

10. The isolated nucleic acid molecule of claim 8, wherein the unique fragment encodes a peptide which is a fragment of a polypeptide consisting of SEQ ID NO:2.

20 11. An expression vector comprising the isolated nucleic acid molecule of claims 1, 2, 3, 4 or 5 operably linked to a promoter.

25 12. An expression vector comprising the isolated nucleic acid molecule of claim 9, operably linked to a promoter.

13. An expression vector comprising the isolated nucleic acid molecule of claim 10, operably linked to a promoter.

30 14. A host cell transformed or transfected with the expression vector of claim 11.

15. A host cell transformed or transfected with the expression vector of claim 12.

16. A host cell transformed or transfected with the expression vector of claim 13.

17. An isolated polypeptide encoded by the isolated nucleic acid molecule of claim 1, wherein the polypeptide, or fragment of the polypeptide, has RIP60 activity

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18. The isolated polypeptide of claim 17, wherein the isolated polypeptide comprises SEQ ID NO:2.

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19. The isolated polypeptide of claim 17, wherein the isolated polypeptide comprises SEQ ID NO:4, SEQ ID NO:6 or SEQ ID NO:51.

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20. An isolated peptide comprising a fragment of the isolated polypeptide of claim 18, of sufficient length to represent a sequence unique within the human genome and identify a polypeptide having RIP60 activity.

21. The isolated peptide of claim 20, wherein the fragment is immunogenic.

22. The isolated peptide of claim 20, wherein the peptide comprises at least 6, 8, 9, 10, 11, 12, 14, 16, 18 or 20 contiguous amino acids having a sequence of a fragment of SEQ ID NO:2.

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23. A composition comprising an isolated agent that binds selectively to a polypeptide comprising SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6 or SEQ ID NO:51 or to a fragment thereof.

24. The composition of claim 23, wherein the isolated agent is a peptide.

25. The composition of claim 24, wherein the peptide is an antibody, or a fragment thereof.

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26. The composition of claim 25, wherein the antibody is a humanized antibody or a chimeric antibody.

27. The composition of claim 23, wherein the isolated agent is conjugated to a detectable label.

28. The composition of claim 27, wherein the detectable label is selected from the group 5 consisting of a radioactive label, an enzyme, a biotin molecule, an avidin molecule, or a fluorochrome.

29. A method for determining a level of RIP60 expression in a sample comprising 10 measuring a test level of RIP60 expression in a test sample, and comparing the test level of RIP60 expression to a control.

30. The method of claim 29, wherein the RIP60 expression is RIP60 mRNA expression.

31. The method of claim 29, wherein the RIP60 expression is RIP60 polypeptide 15 expression.

32. The method of claim 30, wherein the RIP60 mRNA expression is measured using the Polymerase Chain Reaction (PCR).

33. The method of claim 30, wherein the RIP60 mRNA expression is measured using 20 northern blotting.

34. The method of claim 31, wherein the RIP60 polypeptide expression is measured using 25 monoclonal antisera to RIP60.

35. The method of claim 31, wherein the RIP60 polypeptide expression is measured using polyclonal antisera to RIP60.